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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/941,839 | 08/30/2001 | Yoichiro Yamashita | 0042-0456P | 6858 |

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EXAMINER

WALLS, DIONNE A

ART UNIT PAPER NUMBER

1731

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------------------|---------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/941,839 | YAMASHITA, YOICHIRO |
| | Examiner Dionne A. Walls | Art Unit 1731 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____ .

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) Claim(s) ____ is/are allowed.

6) Claim(s) 1-12 is/are rejected.

7) Claim(s) ____ is/are objected to.

8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 30 August 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. ____ .
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-3

4) Interview Summary (PTO-413) Paper No(s). ____ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: ____ .

DETAILED ACTION

Claim Objections

1. Claims 1, 7 and 10 are objected to because of the following informalities: ***

In claim 1, line 7, insert – of --, after the word “ester”,

In claim 7, line 2, changed “phtodegradation” to – photodegradation --,

In claim 10, line 2, insert – is --, after the word “structure”, and in line 3, replace “a” with –an--.

Appropriate correction is requested.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7-9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/24685.

WO 93/24685 discloses cellulose acetate fibers which are useful as filter material for tobacco products, said filter materials comprising a photoactive metal oxide (pigment) and one or more metal salts to render the filter biodegradable (see abstract, the claims, pages 15-16). While WO 93/24685 may not specifically state that the tricalcium phosphate acts as a “biodegradation promoting agent”, it does state that the salt serves to augment thermo-oxidation processes associated with biodegradation. Therefore, it follows that one having ordinary skill in the art would have understood this

salt to serve as a promoter for the biodegradation process and would have utilized the chemical as such.

Regarding claim 2, the cellulose acetate may have a DS values form 1.7 – 2.6 (corresponding to the “DS value...between 2.0 – 2.6”).

Regarding claim 4, tricalcium phosphate (corresponding to the “calcium tertiary phosphate”) may be utilized as the metal salt, said salt would also exhibit the water solubility recited in claim 3.

Regarding claim 5, WO 93/24685 states the tricalcium phosphate may be provided in concentration of from .1 – 5 % weight percent based on the weight of the fiber (corresponding to the claimed “.01 – 10% by weight based on said cellulose acetate”).

Regarding claims 7 and 8, WO 93/24685 discloses that the photoactive metal oxide (pigment) can comprise titanium dioxide (corresponding to the claimed “titanium oxide”). While WO 93/24685 may not teach that this substance serves as a “photodegradation promoting agent”, such is obviously the case since WO 93/24685 state that the pigment acts as photo-oxidation catalysts to accelerate the decomposition of the cellulose ester (see page 14). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize the pigment of WO 93/24685 as a photodegradation promoting agent since the metal oxide serves to promote photo-oxidation which hastens the degradation process.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/24685 in view of Hawley (Condensed Chemical Dictionary) and Barkowsky et al (US. Pat. No. 5,744,523).

While WO 93/24685 may not state that the biodegradation promoting agent, tricalcium phosphate, is in the form of fine particles, it follows that this is the case since, according to Hawley, such substance is in the form of a powder – which, by definition, is finely divided matter. One having ordinary skill in the art would understand this to mean that said “powdery” substance consists of “fine particles”. While WO 93/24685 modified by Hawley may not teach of a dispersant for dispersing the fine particles in the cellulose acetate composition, Barkowsky et al teaches dispersing finely divided solids, including pigments, in organic media in the presence of a dispersing agent (see col. 1, lines 9-18). It would have been obvious to one having ordinary skill in the art at the time of the invention to utilize a dispersing agent to disperse the fine particles of tricalcium phosphate (which is coupled with the titanium dioxide pigment) in order to ensure a stable/effective dispersion of material in the organic media, which is known from the disclosure of Barkowsky et al.

5. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 93/24685 in view of Ito et al (US. Pat. No. 5,913,311).

While WO 93/24685 may not specifically teach that the cellulose acetate structure, which may serve as a cigarette filter, is in the form of an unwoven fabric formed of short fibers having a length of 1-100 mm. However, Ito discloses a cigarette filter comprised of an unwoven sheet manufactured from short fibers made from

cellulose acetate fiber tow which has been cut to 1-100 mm (col. 7, lines 52-53).

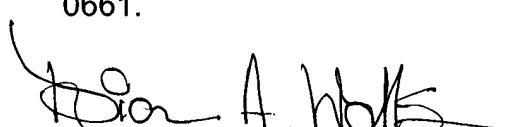
Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to fabricate the cellulose acetate filter of WO 93/24685 from this type of filter material since filters made from cellulose acetate having the claimed features are known, as evidenced by the Ito et al disclosure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne A. Walls whose telephone number is (703) 305-0933. The examiner can normally be reached on Mon-Fri, 7AM - 4:30PM (Every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P Griffin can be reached on (703) 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.


Dionne A. Walls
November 2, 2002